

Containing U.S. health care costs: What bullet to bite?

by Stephen F. Jencks and George J. Schieber

In this article, the authors provide an overview of the problem of health care cost containment. Both the growth of health care spending and its underlying causes are discussed. Further, the authors define cost containment,

provide a framework for describing cost-containment strategies, and describe the major cost-containment strategies. Finally, the role of research in choosing such a strategy for the United States is examined.

Introduction

For the last quarter century, health care has been the world's most successful industry, nowhere more so than in the United States. But open-ended commitments to the elderly and the employed in the expansive 1960s, which financed dramatic growth in access to care and new technology, have become increasingly difficult to cover in the last 15 years. Although U.S. health care costs have been in a proclaimed crisis for 10 to 20 years, we have made strikingly little progress in containing the growth of these costs. Neither the "regulatory" policies of the 1970s nor the "competitive" policies of the 1980s have slowed the growth of health care spending.

Since 1970, U.S. health care expenditures have grown at an annual rate of 11.6 percent, 2.9 percentage points faster than our gross domestic product (GDP). Health care spending in the United States is the highest in the world and has been growing faster than spending in other major countries, and the gap between the United States and other countries is widening. Our failure to contain this growth is particularly dramatic because almost all other developed countries have had substantially greater success (Schieber, 1990, 1991) and because growing health expenditures have neither reduced the number of Americans without health insurance nor substantially improved the crude health statistics for the U.S. population.

Growth of health care costs

National health care expenditures

Figure 1 shows the rate of growth of GDP, total health expenditures, and the major components of those expenditures from 1970 to 1990. A cumulative growth index is created by dividing each year's expenditure by the 1970 base-year expenditure level. By plotting these cumulative indexes on a semilogarithmic scale, the slope from year to year represents the annual rate of growth.

Total health care expenditures, as well as hospital, physician, nursing home, and pharmaceutical expenditures, all increased at rates well in excess of general economic growth. Over the entire period, total health care expenditures increased at an annual rate of 11.6 percent. GDP, however, increased at an annual rate of only 8.7 percent, so health care spending increased

from 7.4 percent of GDP in 1970 to 12.4 percent in 1990. A more dramatic way to put this is that health care accounted for 13.5 percent of the nominal growth and 19 percent of the real growth in GDP from 1970 to 1990 (Table 1). Nursing home expenditures increased the fastest over this 20-year period, with a 12.7-percent annual rate of growth, followed by physicians, at 11.8, hospitals, at 11.7, and pharmaceuticals, at 9.3.

Setting general economic inflation aside, excess medical care inflation and increases in the volume and intensity of services have been the major endogenous contributors to health care expenditure growth during this 20-year period. Population growth has been a far less important factor (Levit and Cowan, 1991). Unfortunately, detailed data for the entire period are not available to disentangle the interactions and precise contributions to spending growth of excess health care inflation, increases in the volume of services, and increases in intensity per unit of service. Table 2 shows the recent trends in hospital and physician expenditures per person and volume of services per person for 1984-89. During this period, while number of hospital admissions and physician visits per person either fell or remained constant, expenditures per person increased dramatically, suggesting that much of the recent growth in these expenditures is the result of increases in the price and intensity per unit of service and not in the volume of services provided.

Medicare expenditures

Because much of the current cost-containment debate has focused on Medicare, an analysis of the expenditure trends in the Medicare program is useful. Figure 2 shows, for the Medicare program, the same information as Figure 1 (excluding prescription drugs). Over the 20-year period, Medicare expenditures increased at an annual rate of 14.3 percent, significantly faster than the rate of 11.6 percent for all health spending and 8.7 percent for GDP. As a result, Medicare spending increased from 0.8 percent of GDP in 1970 to 2.1 percent in 1990, and from 10.3 percent of all health care spending in 1970 to 16.7 percent in 1990. About 2-3 percentage points of this growth is the result of growth in the number of enrollees, aging of the enrolled population, and coverage of the disabled and those with end stage renal disease. We do not know if the remainder of Medicare's substantially higher rate of spending growth results from more generous payment rates for medical care providers, supplemental insurance that reduces demand restraints, new and expensive technologies being differentially used for Medicare enrollees, or more liberal benefits and coverage rules relative to other payers.

The views expressed are the authors' and do not necessarily reflect those of the Health Care Financing Administration.

Reprint requests: George J. Schieber, Ph.D., Room 2230, Oak Meadows Building, 6325 Security Boulevard, Baltimore, Maryland 21207.

Figure 1
Relative growth index in nominal health expenditures: United States, 1970-90
 (semi-logarithmic scale)

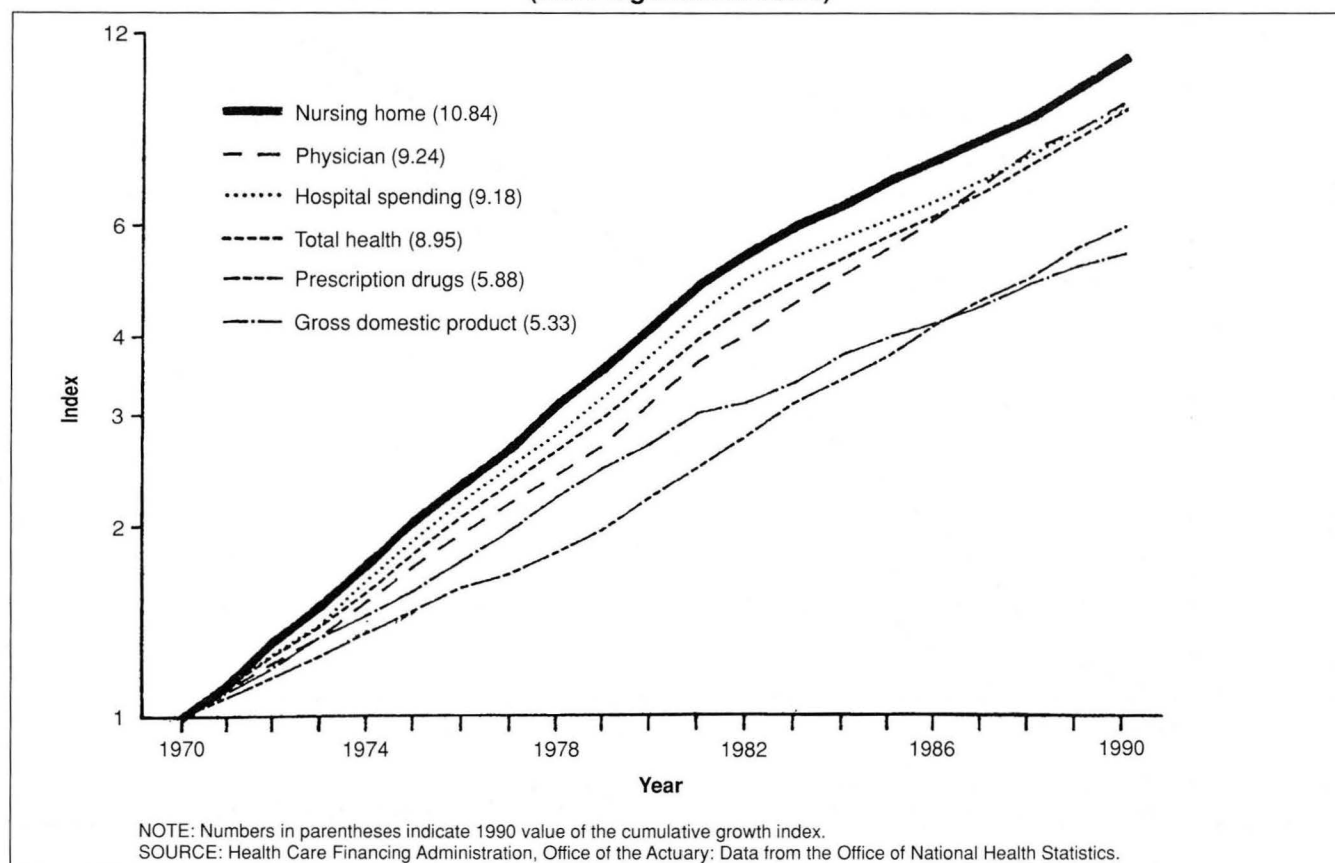


Table 1
Rates of growth in health care expenditures:
United States, 1970-90

Item	1970-80	1980-90	1970-90
All services	12.9	10.3	11.6
Hospital	13.9	9.6	11.7
Physician	11.9	11.6	11.8
Nursing homes	15.1	10.3	12.7
Drugs	8.2	10.4	9.3
Medicare	17.3	11.5	14.3
Hospital	17.5	10.0	13.7
Physician	17.4	14.2	15.8
Nursing homes	5.3	19.7	12.3
Population	0.9	1.0	1.0
GDP	10.3	7.2	8.7
GDP deflator	7.3	4.2	5.8
Real GDP	2.8	2.9	2.8
Real health (health deflator)	4.7	3.2	3.9
Real health (GDP deflator)	5.2	5.9	5.5
Health care expenditure growth as percent of total GDP growth	10.5	15.4	13.5
Real health care (GDP deflator) expenditure growth as a percent of real total GDP growth	15.5	21.5	19.0

NOTE: GDP is gross domestic product.

SOURCES: (Levit et al., 1991); (Organization for Economic Cooperation and Development, to be published).

Table 2
Services per capita and outlays per capita in
nominal dollars: United States,
selected years, 1984-89

Item	1984	1986	1988	1989
Number of physician visits ¹	5.4	5.5	5.4	5.5
Number of hospital admissions ²	0.13	0.12	0.11	0.11
Outlays for physician services	\$210	\$264	\$334	\$371
Outlays for hospital services	609	685	788	858

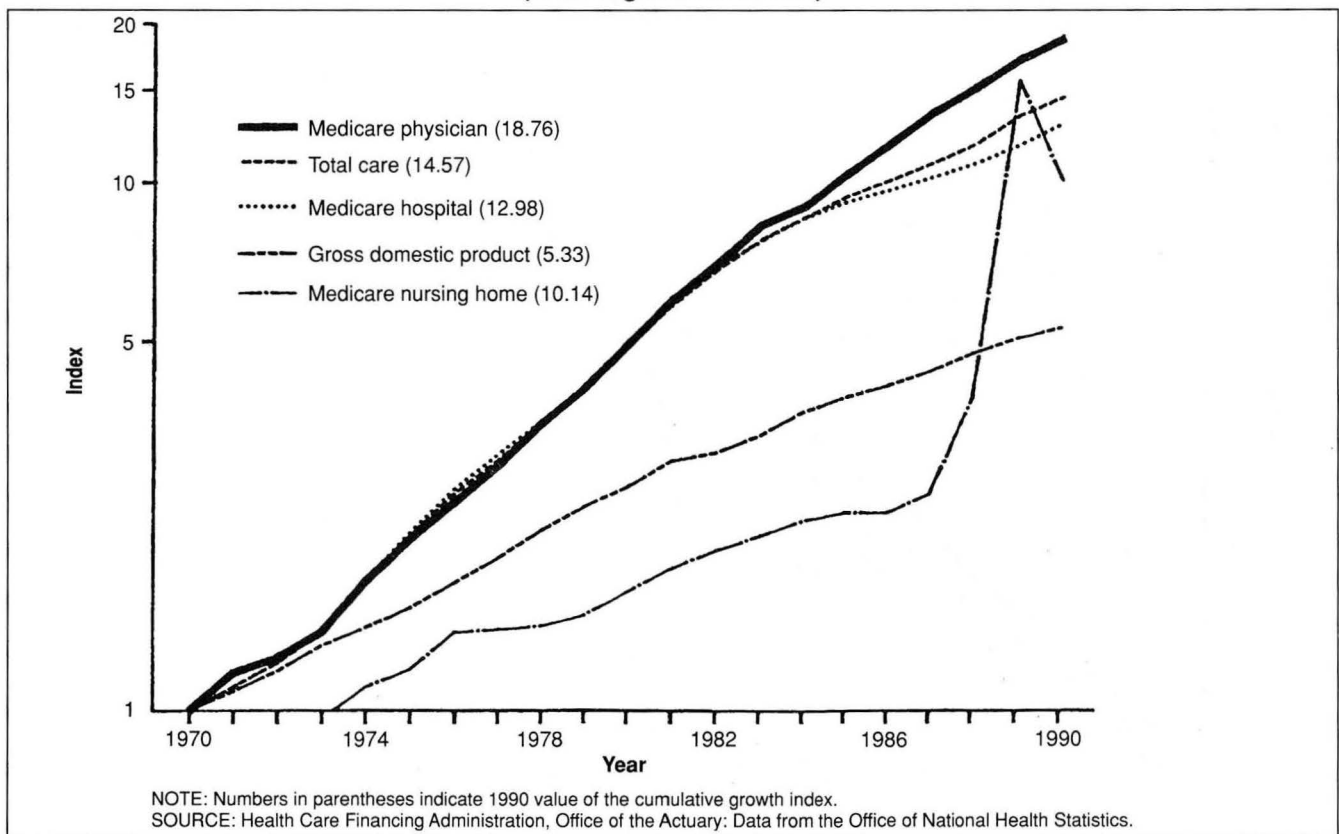
¹Calculated as number of contacts (excluding inpatient contacts) plus inpatient days minus telephone contacts.

²Excludes deliveries.

SOURCES: (National Health Interview Survey 1986, 1987, 1989, 1990), for visits and admissions; (Lazenby and Letsch, 1990) for outlays.

Some combination of these factors probably accounts for the fact that Medicare physician expenditures over this 20-year period grew 4 percent faster per year (more than 30 percent more rapidly) than overall physician spending (15.8 percent versus 11.8 percent), while Medicare hospital spending grew 2 percent per year faster (17 percent more rapidly) than overall hospital spending (13.7 percent versus 11.7 percent). The fact that Medicare physician spending grew 2.1 percent per year faster than Medicare hospital spending resulted in hospital

Figure 2
Relative growth index in nominal Medicare health expenditures: United States, 1970-90
(semi-logarithmic scale)



expenditures declining from 69 percent of all Medicare spending in 1970 to 61 percent in 1990 and the physician share increasing from 21 percent in 1970 to 27 percent in 1990. The very rapid growth of Medicare hospital and physician spending, even relative to overall hospital and physician spending, and its resulting contribution to the Federal budget deficit provided much of the impetus for the Medicare hospital and physician payment reforms of the 1980s.

Causes of growth

It is difficult to disentangle the many forces that have generated this growth. In a generally inflationary economy, health care costs can be expected to rise just as the cost of everything else rises, because the health care sector purchases its inputs in the general economic market. In addition, total costs will rise as the population grows and ages. Nevertheless, during the past 20 years, personal health care expenditures, adjusted for changes in the GDP deflator, have risen at an annual rate of 5.5 percent a year (Table 1). The factors responsible for this 5.5-percent annual real growth in health care expenditures include:

Insurance coverage and premium subsidies. Restraints on demand for services are very weak compared with the rest of the economy because third-party insurers pay most costs. These problems are compounded because so few

people pay the full cost of their premiums. For most employed individuals and their dependents, the premiums, in whole or substantial part, are paid by employers in pretax dollars. For the elderly, hospital premiums are paid by the payroll taxes of others, and premiums for physician services are predominantly paid by general revenues. For persons eligible for Medicaid, all costs are paid by others. Many persons either face no coinsurance and deductibles or purchase supplemental insurance that circumvents any restraining effect. Even those who do face cost sharing have great difficulty in evaluating the need for services, especially in the context of virtually unlimited expectations of miracles from modern medicine.

Non-price competition among providers. When insurance weakens price competition among providers, they may compete primarily through seeking to provide "better" (i.e., more complex and thorough but not necessarily more effective) services. When the dominant form of competition is on the basis of "quality," even price-conscious purchasers may be unable to circumvent the resulting price setting. For example, hospitals and other organizations dependent on physician referrals may provide amenities and access to specialized services in order to attract physicians as well as patients.

Open-ended payment systems. Fee-for-service payments to physicians and cost- or charge-based payment of other providers are powerful tools for ensuring access to care

and dissemination of new technology, but they provide few incentives for containing health care costs or improving efficiency. Insurers, with limited market power, may accept higher rates and traditional payment methods in order to ensure access for their clients.

Developments in technology. New technologies, such as endoscopy, angioplasty, and new imaging methods, underlie some of this volume-intensity growth. But the volume and intensity of less technological services also grows as they are more widely used (Garrison and Brown, 1991).

Malpractice litigation. Malpractice insurance is a growing part of physician costs, but malpractice litigation may be more expensive both by encouraging services of uncertain value (defensive medicine) and perhaps by expressing a social assumption that every patient is entitled to all possible care.

Self-referral. Physicians are more likely to order diagnostic tests if they own the equipment on which tests are done (Hillman et al., 1990; U.S. General Accounting Office, 1989; Office of Inspector General, 1989). Congress has responded to this evidence by restricting physician ownership of clinical laboratories to which they refer Medicare patients (in the Omnibus Budget Reconciliation Act of 1990), but there are no such restrictions on equipment in the physician's office.

Costs of cost containment and competition. Proliferation of cost-containment systems may substantially increase both payer and provider overhead. Program administration for public programs and net costs for private insurance rose from 4.9 percent of national health expenditures in 1980 to 5.8 percent in 1989 (Lazenby and Letsch, 1990). Office expenses rose from 44.5 percent of gross physician earnings in 1982 to 48.9 percent in 1989 (American Medical Association, 1991). In addition, the diverse billing and verification procedures of multiple payers substantially increase providers' administrative costs (Woolhandler and Himmelstein, 1991).

Increasing physician supply. As the ratio of physicians to population grows and as the mix of physicians tilts toward specialists and subspecialists, new physicians will tend to supply new services. These increases in supply contribute to cost increases.

Upcoding. In a fee-for-service environment in which physicians and outpatient diagnostic services are paid for on the basis of 7,000 codes and inpatient hospital services are paid for on the basis of 500 diagnosis-related groups (DRGs), costs can increase because providers apply more costly codes to report services that have not changed.

These factors create an environment in which almost all forces lead to the demand for and provision of more services. Tax subsidization of premiums and limited cost sharing provide few restraints on demand. Comprehensive insurance coverage for most of the population, open-ended provider payment methods, and the threat of malpractice litigation provide few restraints on supply. Consumer expectations, non-price competition, profitability, and the ease of implementation foster the rapid adoption of new technologies. Limited knowledge of the effectiveness of medical treatments and the inability of consumers to assess their medical care needs further undermine the workings of competitive market forces.

Containing costs

Defining cost containment

Most discussions do not define cost containment and implied definitions vary widely (Garrison, 1992). Cost containment is defined as reducing the level or rate of increase in health care costs. Although this tautological definition appears logical in a grammatical sense, there are several major issues in defining costs and analyzing reductions. These include:

- Providers' costs versus payers' expenditures.
- Actual outlays versus potential outlays for medically effective services provided in an economically efficient manner.
- Effects of individual payers' expenditures on total expenditures.
- Effects of cost containment on access and quality.
- Cost containment and defining "acceptable" growth.

Costs versus expenditures

The costs incurred by a provider may differ substantially from the amount paid by a particular patient or third-party payer. Current debates about the adequacy of the Medicare DRG payment rates, Medicaid physician and hospital payment levels, and the general issue of cost shifting attest to the concerns about differences between providers' costs and payment rates. In an accounting sense, aggregate expenditures for all payers equal aggregate input costs including provider profits. The issue is whether costs and profits are "excessive"—that is, whether they represent medically effective and cost-effective production and consumption of services.

Efficient outlays versus actual outlays

Outlays for medically effective and appropriate services furnished in an economically efficient manner might be quite different from current outlays. But economic efficiency, like clinical effectiveness, is almost unmeasurable in routine health care settings. Moreover, given the difficulty of measuring multidimensional health outcomes, rigorous assessment of efficiency is extremely difficult. Nevertheless, analyses of cost-containment strategies must explicitly address cost effectiveness and therefore must also address problems of economic efficiency, medical appropriateness, and medical effectiveness, as well as the inherent generic issue of quality.

Payers' expenditures versus total expenditures

Outlays for a particular public or private program may be changed substantially through individual payers' cost-containment efforts. Because providers may have difficulty treating the patients of different payers in different ways and because providers may have certain revenue expectations or needs, there is a tendency to use payments from payers with high payment rates to cover costs of patients with low payment rates rather than to change clinical practices. We assume that the proper issue

for national policy is to focus on containment of total expenditures, not the shifting of payments from one payer to another.

Access and quality

Efforts to contain costs through reducing payments per service may affect access to care, unless the supply of services is perfectly inelastic. Strategies designed to contain costs by reducing the supply of services might actually make care less accessible to those least able to pay, if prices are allowed to rise. On the other hand, controlling costs may improve access by making insurance more affordable or by promoting primary care and preventive services. If reducing payments also reduces costs, it may reduce quality of care; discussions usually assume that costs can be reduced by increased efficiency and that neither access nor quality need suffer.

What is an acceptable rate of growth?

Cost-containment strategies must be concerned with both the levels and rates of increase in health care expenditures. Although one can conceptually discuss levels and rates of increase in terms of clinical effectiveness and economic efficiency criteria, putting such criteria into effect is difficult. Moreover, consideration of access impacts implies normative judgments on the part of policymakers. At an operational level, policymakers have used such factors as population, service volume and intensity, wage and salary base, GDP, cost of living, and input costs to adjust for "appropriate" growth. Part of the difficulty in establishing both absolute levels and rates of growth reflects tensions between market-oriented economists and those oriented toward government regulation. Some market-oriented economists have argued that if the American public chooses to devote its resources to health care instead of video games, automobiles, etc., so be it. But almost all economists agree that insurance, the premiums for which are subsidized by taxes or not paid by the patient, has very seriously distorted health care decisionmaking. In this context, some would try to restore market mechanisms whereby consumers would make choices about expenditure levels with their own money at risk. Others would abandon the market and try to determine correct health expenditure levels and attain them through government controls. The problem we wish to emphasize is that there are no objective operational criteria for determining an "appropriate" level or rate of growth in health spending.

Specific strategies

A number of authors (Rice, 1991; Davis et al., 1990; Reischauer, 1991) have described alternatives for health care cost containment, and this article does not replicate those reviews. Rather, we examine the most important technical and policy issues raised by these cost-containment methods.

Cost sharing

Cost sharing can be used as both a financing and a demand-reduction mechanism. From a financing perspective, deductibles and coinsurance can be used to shift costs from a public or private insurer to the consumer. Cost sharing can also be used to reduce demand for health services. When health (or any other) services are free at the point of purchase, from the consumer's perspective, the consumer will tend to use more services than if he or she were paying some or all of the charge.

The RAND health insurance experiment has demonstrated that cost sharing can be an effective means to reduce utilization levels with quite limited effects on health care outcomes. The effects of cost sharing on expenditure growth over time are less clear. Not surprisingly, cost sharing had a greater impact on utilization by the poor than the non-poor and in some instances did lead to measurable adverse impacts on health outcomes for low-income individuals (Keeler et al., 1985; Lurie et al., 1989). Moreover, it is difficult to envision ways in which cost sharing can work well for those with catastrophic illness costs. Thus, effective cost-sharing policies must be designed to protect the poor and those with catastrophic illness costs. Another problem with cost-sharing approaches is that consumers, especially the elderly, tend to be risk-averse. In fact, 80 percent of Medicare beneficiaries are reinsured against cost sharing by Medicaid or private insurance (U.S. Department of Health and Human Services, 1987). If cost sharing is considered in the broader context of total out-of-pocket expenditures (e.g., including insurance premiums), not just expenditures at the point of service, an alternative approach to increasing cost sharing is to eliminate or reduce tax subsidies, such as the tax exemption for health insurance purchased by employers for their employees.

Consumer and purchaser information

Providing information to purchasers about the effectiveness and costs of medical treatments, health promotion and disease prevention, and the costs and quality of alternative providers may help enhance consumer and provider decisionmaking. Releases by the Health Care Financing Administration (HCFA) of hospital mortality information and nursing home survey data, as well as promotion of second surgical opinions, illustrate this strategy. Business consortia in some States have promoted collection of data on risk-adjusted hospital outcomes in order to allow informed negotiations between payers and purchasers. The Pennsylvania Health Care Cost Containment Commission has been publishing such data for several years. There is little evidence about the effects of such information disclosure policies on expenditures or quality of care.

Vouchers

A voucher is a certificate that an individual can present to an insurer or comprehensive provider to pay for insurance or service. The organization accepting the

voucher is then responsible for providing all (or some subset) of the care for a fixed period of time. In effect, the Medicare beneficiary's privilege of enrolling in a risk health maintenance organization (HMO) is a voucher, although traditional fee-for-service providers have no formal mechanism for competing with HMOs for the beneficiary's enrollment. The Medicare Select program extends this voucher privilege to some preferred provider organizations (PPOs). The intent is to create incentives for insurers and providers to deliver services more efficiently and for beneficiaries to shop wisely (Butler, 1992). The critical issue with voucher approaches is setting accurate risk-adjusted voucher values. This is critical because providers will otherwise realize greater rewards from selecting patients with profitable payments than for improving efficiency for enrolled patients. There is, for example, some evidence of favorable risk selection by HMOs (Hadley and Langwell, 1991).

Restrict supply

Restricting supply is a two-stage process. The first stage is making planning decisions to eliminate or not create unutilized capacity—for example, closing empty hospital beds or not training physicians who will not be employed. This kind of planning is contentious and politically difficult because it affects communities and livelihoods, but it is easy compared with the second stage.

The second stage involves planning decisions to not create or to eliminate the capacity to produce services that are currently used or demanded but are judged “unnecessary.” This process means that patients will be denied care that either they or their physicians want—this is usually called “rationing.” The critical assumption in the second stage is that planning will lead to an appropriate allocation of services, but empirical evidence on this point is mixed. On one side, there is evidence that critical care beds are rationed in a sensible way when there is a shortage (Selker et al., 1987; Singer et al., 1983; Strauss et al., 1986). On the other hand, there is evidence that the percentage of services such as coronary artery bypass and coronary angiography that are unnecessary is not lower in areas where the rate of service is lower (Chassin et al., 1987). Even more disconcerting, rates of inappropriate services are about as high in Trent, England, where there is rationing through queuing (Gray et al., 1990), as in the United States.

Although federally supported health planning has been shrinking since the late 1970s, the Federal Government continues to subsidize training of health professionals through grants and scholarships and through medical education payments to hospitals. However, health planning is still extensively employed in a number of States, particularly with regard to hospital and nursing home beds (Intergovernmental Health Policy Project, 1991).

Many plans for controlling costs limit supply by restricting the funding available per person and then decentralize decisionmaking and financial responsibility to levels such as the State (for Medicaid), an HMO, or a health authority (Great Britain). These strategies are intended both to provide incentives for greater efficiency and more appropriate care and to allow some local flexibility in living within a fixed budget.

Increase appropriateness of care

This strategy generally envisions some combination of research to identify effective ways to care for conditions, education to persuade physicians to use those strategies, and precertification or utilization review to prevent unnecessary care. There is substantial evidence that rates of provision of services such as prostate, back, and coronary artery surgery, as well as diagnostic procedures such as endoscopy and angiography, vary widely among States and smaller regions (Chassin et al., 1987, cite many of these studies; see also U.S. Department of Health and Human Services, 1990); further evidence indicates that there is substantial disagreement on indications for performing these procedures (Park et al., 1986). Significant controversy surrounds estimates of how many such procedures are medically unnecessary, but there is no evidence as to whether the proportion of unnecessary procedures has grown with time or whether medical services that are growing in frequency are more likely than others to be performed inappropriately.

There is substantial evidence that publishing policy documents about consensus standards for practice does not appear to change physician practice (Koseoff et al., 1987; Greer, 1987), although there is also evidence that information feedback can reduce practice variations (Garrison, 1992). Other educational strategies tend to have time-limited effects, but utilization review and payment rules can change practices dramatically. There are two reasons why increasing appropriateness of specific services may not reduce costs: More appropriate care may mean more rather than fewer procedures (this is certainly true for preventive services); and physicians, when frustrated in their efforts to provide monitored services, may simply substitute services that are less carefully monitored. As with providing information to consumers and purchasers, there is little evidence about the effect of this strategy on expenditures or quality of care. For the present, effectiveness research and education and monitoring appear to have more promise as ways to improve the cost/effectiveness ratio by increasing effectiveness rather than by decreasing overall costs.

Limit coverage of services

Both public and private insurers limit the services they cover through specific exclusions, numerical or financial limits, or limits on coverage according to circumstances. For example, a generous policy may cover all ambulatory care. A more limited policy may exclude ambulatory psychiatric services or may limit the number of such services. A still more limited policy may cover ambulatory care only in emergencies or may not cover ambulatory care at all. In addition to these generic coverage issues, many programs exclude specific services that may be deemed experimental or ineffective.

The most aggressive use of coverage policy to contain costs is probably Oregon's proposed hierarchical listing of Medicaid services by cost-effectiveness ratio (Hadorn, 1991; Daniels, 1991). Under this system, Oregon would cover as many services as could be included within the program budget; others would not be covered. The Oregon approach is important as an explicit effort to

examine the cost-effectiveness of the universe of health services and to make explicit tradeoffs between benefits and eligibility. As a cost-containment strategy, it has three limitations: (1) It accepts the current costs of covered services in making decisions; (2) reallocating some payments from some candidates for highly effective procedures to selected candidates for modestly effective procedures might be more cost-efficient; and (3) services are being limited for only one segment of the population.

Establish efficient payment systems

Efficiency, and in some cases medical effectiveness, can be enhanced by particular provider payment methods. Approaches to reforming payment include capitation, bundling, and altering relative prices of services.

- **Capitation.** Capitation payment arrangements, by paying a fixed amount and making one entity responsible for all care for a particular period of time, provide incentives for both economic efficiency and delivery of medically appropriate services. Partial capitation approaches, whereby only a subset of services is covered by the capitation rate, have similar incentives, except they have the disadvantage of providing incentives for the capitated entity to substitute services outside the capitation arrangement for those within. Unless there is some risk sharing on the part of the capitated entity for such non-capitated services, cost effectiveness may not be improved. Although capitation arrangements are generally associated with the coordinated-care approaches discussed later, other types of capitation, such as vouchers for the purchase of insurance and carrier and intermediary at-risk mechanisms, are also examples of capitation-based approaches. The effects of these latter types of approaches on costs and quality are largely unknown.
- **Bundle services.** Bundling pays a provider a fixed amount for a group of services that might otherwise be billed for separately (e.g., a capitation amount for a year's care, a DRG amount for a hospitalization, a global fee for a surgical episode). This payment method gives the provider an incentive to provide the services in the bundle as inexpensively as possible and to minimize the number of services. This strategy is extremely powerful for containing payments in a monopsonistic market, such as Medicare enjoys with hospitals, where the provider has little choice but to take the payer's price. In a market where the payer is not powerful, the provider may set a bundle price that reflects costs and therefore may experience no incentive. Evidence regarding the effect of bundling on effectiveness of care is inconclusive: Several studies (Coulam and Gaumer, 1992; Guterman et al., 1988; Kahn et al., 1990; Rogers et al., 1990) found no adverse effect of the DRG-based payment on quality or outcomes of hospital care under Medicare, but payments substantially exceeded costs during the years studied. On the other hand, there is some evidence of skimping on services under ESRD bundling (Sisk, Gianfrancesco, and Coster, 1991). The effect of bundling on efficiency is very difficult to estimate: Hospitals appear to have realized significant savings

when DRGs were implemented (Coulam and Gaumer, 1992; Guterman et al., 1988), and HMOs may be more efficient than fee-for-service providers (Rice, 1991; Wallack, 1992; Hadley and Langwell, 1991); it is less clear whether either strategy has reduced long-term rates of growth (Guterman, Altman, and Young, 1990; Newhouse et al., 1985).

- **Change relative payments for individual services.** This strategy assumes that some services are provided more frequently than is medically warranted because they are disproportionately profitable to providers. The resource-based relative value scale (Hsiao et al., 1988; U.S. Department of Health and Human Services, 1989) seeks to balance payments so that all procedures will be equally profitable. There is hope that certain services that are highly profitable and have shown high growth, such as endoscopy and ambulatory cardiac monitoring, will show lower growth. There is no empirical evidence as to the overall long-term impact of such rebalancing on total outlays, although HCFA has found evidence that the overall short-term effect is likely to be a growth in outlays as practices increase service volumes to offset reductions in payments. Changing relative payments also has a role in making cost containment more equitable. Altering relative and absolute prices at the same time can place the greatest part of the burden of cost containment on those providers whose income and profits are currently highest. This has been the effective impact of a number of recent Medicare program changes.

Coordination of care

Coordination of care means efforts to ensure not only that individual services are appropriate but that the totality of services provided to a patient is configured for effectiveness and efficiency. Coordinated-care approaches are generally characterized by linking financing, delivery, and utilization review (Langenbrunner, to be published). Coordination of care in a prepaid capitated payment environment "promises no less than the ability to contain health care costs and maintain (or even enhance) quality of care while introducing competition into the health care system that will have an impact on all service providers" (Hadley and Langwell, 1991). HMOs and PPOs are the most common forms of coordinated care. Yet these generic labels mask a plethora of different organizational arrangements. Selected HMOs have been shown to be 20-30 percent less costly than fee-for-service providers and provide services of at least comparable quality. There is some question as to whether HMOs control rates of increase in costs any better than fee-for-service providers, and there is some evidence of favorable selection of enrollees on the part of HMOs. The evidence about the performance of PPOs is less clear (Hadley and Langwell, 1991; Wallack, 1992).

Coordinated-care approaches have the potential for containing costs and ensuring quality in a decentralized, less intrusive manner. A special form of cost sharing in the area of coordinated care is the "triple option," in which a member has minimal or no cost sharing when using an HMO, moderate cost sharing when using a PPO associated with the program, and maximum cost sharing when using a provider unassociated with the program.

The triple option allows the patient to balance choice of provider against increased cost sharing. The effectiveness of this model in reducing costs is unclear.

Using a combination of consumer information, reduction of subsidies, efficient pricing strategies, and coordinated care may create many features of a competitive market. Such a system could create competitive pricing and strong consumer and provider incentives for cost containment.

All-payer systems

There is some debate as to whether effectively controlling costs requires applying cost-containment policies to the whole system. Universality can be achieved by having a single payer (as in each Canadian province) or a single set of rules applying to (almost) all payers (as in Germany). Such uniformity is widely thought to give any system more power in controlling costs, and all-payer systems clearly minimize cost shifting and reduce the administrative costs of dealing with multiple payers. Opponents fear, however, that universality also stifles innovation, consumer choice, and market forces. Almost all other industrialized countries have some kind of all-payer system, but decisions are generally decentralized to province or state levels in large countries. A number of these countries also have small, more expensive private insurance programs to which all-payer rules may not apply.

The only national experience with all-payer controls in the United States was the Economic Stabilization Program of 1972-74. The controls were credited with moderating hospital cost inflation, although they were less successful in controlling physician expenditures, and prices rebounded substantially after the controls expired (Davis et al., 1990; Holahan and Scanlon, 1979). A number of States established all-payer systems for hospital services, and there is some evidence that mandatory programs significantly moderated the rate of increase in hospital costs (Davis et al., 1990; Anderson, 1992). Unfortunately, there is little evidence about the effects of these systems on quality, access, or the long-term ability of the hospital system to adapt to new stresses and demands.

Expenditure targets

This strategy rests on creating a target level for total expenditures. The target is given power by rules under which any expenditures above the target will trigger future reductions in payments per service or coverage. Such targets can be applied across all providers or to groups or individual providers. Expenditure targets differ from global budgets in that they are a policy goal rather than an absolute limit on spending, and they trigger payment reductions that apply to future years rather than to the current year. The Medicare volume-performance standard is such a target applied to growth in spending. The American Hospital Association established voluntary expenditure targets in the late 1970s to dissuade Congress from establishing mandatory hospital spending controls. Hospitals met the target in the first year, which helped avert controls, but substantially exceeded the voluntary

targets in the 3 following years (Davis et al., 1990). The difficult problem with designing and using targets is that the purpose is not to reduce payments but to change provider behavior, and this requires setting targets for groups of providers that are small enough to work together, eliminating legal restrictions so that groups may work together, and having timely information to establish the cause-and-effect relationship. Such targets are not easy to establish and administer, and the data requirements are substantial.

Global budgets

Global budgeting approaches are common in other countries for physician and hospital services and in formerly socialist bloc countries for all services. In addition to a formal rule that the system must operate within the budget, global budgets differ from expenditure targets because there is some kind of formal management process to ensure staying within the budget.

- Hospitals. Many countries have centrally determined global budgets for hospitals. In the United States, the States of Maryland, New Jersey, New York, and Massachusetts have had systems that set rates with regard to overall hospital budgets (Anderson, 1992).
- Physicians. Germany (Hurst, 1991; Schneider, 1991) and some Canadian provinces (Iglehart, 1986a, 1986b) have payer-level global budgets for physicians. Quebec, which limits total payments to physicians, establishes both individual and aggregate budget limits. Generally, physician organizations have limited power in determining the size of a global budget but play a large role in dividing it up. There is evidence that physicians respond to reduced payments by increasing the volume of services they provide (Holahan and Scanlon, 1979; Rice, 1983; Mitchell, Wetig, and Cromwell 1989). Physicians cite excessive numbers of (short) visits and high drug prescription rates in the German system (Hurst, 1991) as the logical result of global budgets that result in decreasing payments per service, but the causal relationship has not been established. However, such responses do not necessarily make either global budgets or expenditure targets ineffective.
- All providers. Centrally allocated global budgets for all health services were extensively used in the Soviet Union and other eastern European countries with disastrous results in terms of efficiency. All these countries, as well as countries such as Great Britain with tight hospital budget limits, are now pursuing decentralization and incentive-based payment mechanisms to encourage efficiency. No Western industrialized country limits total health spending to a predetermined global amount.

Global budgets remove many of the incentives for gaming inherent in more fragmented payment policies, but the formula for determining the budget defines incentives for local decisionmakers. For example, excessive reliance on previous-year occupancy rates in global budget formulas seems to produce unnecessarily long hospital stays in some countries, and the interest in DRGs in many countries reflects the need to base budgets

on better productivity measures. On the other hand, there is little or no experience in setting and allocating such budgets in this country.

Change relations with providers

Purchasers of health care face a peculiar dilemma in the United States: They cannot bargain with groups of providers (such as physicians or hospitals) because antitrust law prohibits the purchasers as well as the providers from forming organizations that could engage in such bargaining. Although such rules are designed to promote competition, neither purchasers nor providers have been particularly successful in using competition to constrain cost increases; instead, providers face a growing body of payer rules that satisfy almost nobody.

Physicians

In Canada and Germany, two countries with certain fee-for-service payment similarities to the United States, physicians have taken up a collective bargaining relationship with payers (provincial governments in Canada and sickness funds in Germany). In the United States, such institutional changes do not appear to be an immediate prospect, but aggressive cost-containment efforts could make them possible, especially if physicians feel that their clinical autonomy or standard of living is threatened. It is prudent to consider the advantages and disadvantages of some options.

In Canada and Germany, organized medicine has very limited control over the amount of money available to pay physicians but very large control over how that money is paid. Physicians largely determine relative payments and police their members regarding utilization review. There is an important reason for this arrangement. Physicians get a large measure of clinical autonomy in return for accepting payment limits, and payers do not need as large a bureaucracy for administration. There are, however, major drawbacks to this arrangement:

- Physicians must join an organization. The United States has a long history of skepticism about "union shops," and there is no physician organization at present that would be obviously acceptable to all physicians.
- Through its power to set payments and review utilization, the physicians' organization acquires quasi-governmental powers that might require careful governmental oversight to protect due process.
- The power to set payments is also the power to shape care and to shape the future. It may not be good public policy to delegate such power exclusively to a medical group.
- By setting uniform payment policies, the group effectively terminates price competition. This may be poor policy in the long run, even if service and quality competition remain intact.

Hospitals

If we look only at the Medicare program, the relationship between the Federal Government and hospitals is not so different from that in other countries, and it is no accident that Medicare has firmer control

over its hospital expenditures than over any other part of its budget. The critical difference between the United States and other countries emerges when we examine the non-Medicare part of hospital operations.

Hospital ratesetting is not unusual in the United States, but it is done at the State level for non-Medicare patients (in Maryland, the State sets rates for Medicare patients as well). States that set rates tend to give hospitals a major voice in public hearings, but a government agency generally makes final decisions. In some States, such as Maryland, hospitals supported the creation and operation of ratesetting commissions to solve problems (such as inadequate Medicaid payments) that they could not legally address through acting collectively in the marketplace. A few States, such as New Jersey and Maryland, have created formal systems by which insured patients subsidize the uninsured.

Role of research

Policymakers look to research and demonstrations for guidance in four key areas of cost containment: understanding the reasons why costs increase, evaluating alternative cost-containment strategies, designing and implementing the selected strategy, and monitoring the impact of new policies.

Reasons why

The contribution of research to understanding the dynamics of increases in health care costs has been relatively modest. Relatively direct actuarial analyses decompose increases into population factors, price increases, and volume and intensity increases (U.S. Department of Health and Human Services, 1989). There is, however, little literature to help us understand, for example, the causal contributions of technology change, growth in profits, changes in input prices, or any of the other factors we identified as causes of growth. Although some of the limitations in research findings have been the result of limited availability of appropriate micro-data sets, lack of information about the complex behavioral interactions underlying health care decisionmaking also underlies much of the difficulty.

Selecting a cost-containment strategy

Research has generated a few cautionary principles in evaluating cost-containment strategies.

The balloon theory holds that health care costs are like a balloon: Squeeze in one place and they bulge in another. This theory finds support in evidence that certificate of need legislation tends to divert rather than prevent expenditures (Salkever, 1979), that PPS controlled growth in hospital payments but increased growth in outpatient payments (Coulam and Gaumer, 1992), and that price controls on physician services are, as already noted, accompanied by growth in volume and/or intensity of those physicians' services.

The complexity theory holds that central regulation of health costs within a market system leads to rules so complex that their effects are unpredictable.

Two examples:

- In PPS, the funding of outlier payments was designed in such a way that significant funds were initially diverted from rural to urban hospitals.
- In Medicare's physician payment reform, the phase-in requirements could have been interpreted in such a way that overall payments would have been inadvertently reduced by about 6 percent.

These design errors had in common that even technicians did not understand the effects until well after the legislation was passed. The implication is that reforms need to be designed so that they can evolve and errors can be easily identified and corrected.

Research has also identified problems with certain strategies: Increasing coinsurance can reduce cost but has some adverse effects on the poor; reducing payments per service results in some increase in volume of services.

Research cannot tell us which of the major strategies adopted in other countries would best fit the United States, nor is it likely that demonstrations will settle most of the critical controversies regarding these strategies. Nevertheless, research can provide information about what strategies have worked under particular circumstances, once both "worked" and the "particular circumstances" are carefully defined.

Implementation methods

Research and demonstrations have been most powerful in developing and testing ways to implement cost-containment strategies. In the last decade, the HCFA research and demonstration efforts have developed the Medicare hospital prospective payment system, the Medicare fee schedule, and prospective payment for hospital capital. Although each of these approaches to cost containment rests heavily on research, each was only an interesting research activity until the political will developed to act.

Evaluating the impact of strategies

Research has made significant strides in evaluating the impact of cost-containment strategies, but these evaluations have been limited by the timeliness of obtaining data, the completeness of these data, and the underlying difficulties in measuring both cost effectiveness and health care outcomes. Two illustrative evaluations suggest what research can and cannot contribute:

Years after the Federal Government reduced support for certificate of need programs, Salkever (1979) showed that these programs, as implemented, had not reduced health care costs. There is still vigorous debate, however, as to whether certificate of need failed because it was a flawed theory or because it was undermined by political compromises.

Four years after the last data were collected, Kahn et al. (1990) and Rogers et al. (1990) published a massive study showing that the implementation of PPS had not changed the national trend toward better hospital care. The major fiscal impact of PPS on hospitals occurred, however, long after the study was finished. In addition, if an adverse effect had been found, it would

have been almost impossible to attribute it to any one of the many forces that were operating simultaneously on the hospital system at that time.

In principle, evaluations can be more timely and more accurate. For example, the U.S. Department of Health and Human Services has new data systems that will make its evaluation of Medicare's physician payment reform far more timely than the examples cited and may make detailed analyses more revealing (U.S. Department of Health and Human Services, 1991). Moreover, detailed information being developed by HCFA, such as the Current Beneficiary Survey, the uniform clinical data set, the Medicare beneficiary registry, and the post-hospital discharge survey, will allow researchers to better analyze health outcomes and financial effects on other payers. Such timely evaluations might help fine-tune reform and minimize adverse effects, but their actual performance is still to be demonstrated.

U.S. efforts to contain costs have been handcuffed, we believe, more by strong forces quietly supporting the status quo and by fears of side effects than by difficulty in finding a system that will work. Nevertheless, the tools can be adapted to our needs when the political consensus to use them emerges.

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